JPRS-TND-86-008

10 APRIL 1986

Worldwide Report

NUCLEAR DEVELOPMENT AND PROLIFERATION

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WORLDWIDE REPORT

NUCLEAR DEVELOPMENT AND PROLIFERATION

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Socialist Cooperation at Kozloduy

Sofia TRUD in Bulgarian 22 Jan 86 pp 1-2

[Article by Vasil Pavlov and Valeri Vedov, TRUD correspondents]

[Text] Let us go back in time for about 2 years. A contract for international socialist competition and cooperation and mutual aid was concluded on 19 April 1984, on the initiative of the Central Council of Bulgarian Trade Unions and with the cooperation of the trade unions of the socialist countries, among the construction workers of block number 5 of the First Nuclear Power Plant in Kozloduy and 22 collectives procuring equipment from the Soviet Union, the GDR, Poland, Hungary and Czechoslovakia. What made the conclusion of this contract necessary?

Above all, it was the need for the accelerated building and commissioning of the first 1000-megawatt turbine outside the Soviet Union. Then, the very scale of construction and the unique nature of the block as a power generating object demanded the frequent ordering and urgent delivery of equipment, alongside designing and the building and installation of equipment, while at the same time seeking and mastering the use of new construction and installation technologies. Thirdly, the 1000-megawatt energy block includes the latest achievements of scientific and technical progress in the power generating industry. It is saturated with computers and a substantial number of microprocessors. The entire control-measuring equipment and all control and safety systems are based on electronics. As a whole, the installation of this block uses a new higher level of technology. This called for the unification and coordination of the efforts of construction workers and equipment manufacturing collectives. Furthermore, it was precisely the contract which allows us even now, after the construction project has been completed in its general outlines, to carry out start-up tuning operations with total understanding and without hindrances.

Such international socialist competition is a new and previously unknown form of social influence and of unifying the efforts of labor collectives of fraternal socialist countries. It was extensively developed on the basis of specific contracts and has already practically proven its advantages in carrying out assignments based on the 1984 Moscow summit economic conference.

The competition has harnessed a number of labor collectives, such as those of the Chepel Plant in Hungary, the Belgorod Power Machine Plant in the USSR and others--for the ahead-of-schedule manufacturing and procurement of additional equipment.

Two years later the results are clear. They were reported and the new contract for the fast building of a sixth power unit was signed yesterday at the Kozloduy SAEK [Economic Nuclear Power Combine] in the presence of representatives of the construction collectives from our country and the collectives producing the equipment in the USSR, the GDR, Poland, Hungary and Czechoslovakia. Also present were delegations of the trade unions of the fraternal countries and members of the embassies of the countries participating in the competition. The meeting was chaired by Ivan Angelov, Bulgarian Trade Unions Central Council secretary. Engineer Boris Georgiev, director of the Investor's Control Directorate, submitted a report on the construction of the fifth power block. He described the effective role of the competition, its mobilizing force and the help it provided in shortening the time of the building of the 1000-megawatt turbine and the successful implementation of the party's assignment of its completion ahead of schedule. He pointed out that during the 2 years contacts among construction workers and their partners in the fraternal countries not only were not interrupted but also led to the adoption of new faster schedules for supplying a large share of the equipment. On behalf of the collective, he expressed the hope that with signing the new contract for the sixth power block, fraternal cooperation will become increasingly more useful.

The winners of the competition for the past 2 years were announced. The winners were the Izhorsk Plant, the Kharkov Turbines Plant and the Podolsk Ordzhonikidze Plant in the Soviet Union, the Polish Zgoda Plant and the "Four April" Plant in Hungary. Ivan Angelov presented the representatives of the winning collectives the special banners of the Bulgarian Trade Unions Central Council, certificates and plaques. The SKET Plant in the GDR was second. It was awarded a special flag, a certificate and a plaque; third was the Tesla Plant in Czechoslovakia. "Champion in the Socialist Competition" badges and gifts in building the fifth energy block were presented to workers and specialists who had made the greatest individual contribution to the implementation of the assignments at the Kozloduy SAEK.

A new competition contract for building the sixth power block was signed by Engineer Boris Georgiev, on the Bulgarian side, and by the heads of the delegations of the trade unions of enterprises supplying the equipment: Aleksandr Koshkin, secretary of the Heavy Machine Building Workers Trade Union Central Committee in the USSR, Gudrun Toeier, on behalf of the United German Free Trade Unions, Stephan Kozhyachi, deputy chairman of the All-Poland Trade Union Accord, Geyza Barakyai, responsible secretary of the Trade Union of Metallurgical Workers in Hungary, and Frantisek Badin, secretary of the Central Committee of Machine Building Workers Trade Union in Czechoslovakia.

After the contract was signed we turned to some of the winners in the competition for the first stage. Here are their statements:

Valentin B. Galavin, boiler maker at the Ordzhonikidze Plant: "We delivered on time and on a high quality level the steam generators, separators and pipes for the first circuit of the reactor for the fifth block. Although I already knew the rating I am once again excited. I shall describe to my comrades everything that I saw and that was said. On behalf of the leadership and the collective, I am empowered to state that we shall struggle once again for first place during the next stage in the competition as well."

Rishard Antonyuk, chairman of the Zgoda Plant trade union committee in Poland: "Our collective supplied the stationary diesel engines for the fifth block. All of us were very happy to be told that we were the winners. Now, back home, we shall describe at a general meeting our encounters with the fraternal collectives and let the people themselves determine the individual bearers of the awards. We are ready to deliver the engines for the sixth block immediately and with excellent quality."

Vaszlo Baran, chairman of the trade union committees of the "Four April" Plant in Hungary: "We were not told in advance that we had won the competition, for which reason the surprise was great and pleasing. The new procurement of the sixth block is not bigger than the previous one, so that in my view our collective will be able to complete it in time and to strive once again for first place."

New Power Turbine

Sofia OTECHESTVEN FRONT in Bulgarian 29 Jan 86 p 1

[Article by Sergey Tsepulin]

[Text] "The hull of the nuclear reactor for the sixth power block, generating 1000 megawatts, arrived from the Soviet Union at the nuclear power plant in Kozloduy."

This information, which came out of the BTA teletype on 10 January, significantly changed the interest shown in the nuclear power plant. So far, it was as though everything was related to the first 1000-megawatt turbine--the fifth power block. Perhaps the reason was that the concrete foundations of the sixth block had still not "emerged" on the surface. Now, however, it is clear that the new construction epic of the first nuclear power plant will be the second 1000-megawatt reactor.

The announcement also reported the record speed at which the 340-ton giant was unloaded and named the people who coped with this task. They included Soviet specialist Valentin Podgurskiy, in charge of the receiving, storing and accounting for the equipment.

A short report cannot include a great deal of information. Frequently one can not even understand the significance of what was accomplished and of the work done by those responsible for the project.

Currently preparations are being made for the wrapping and protection of the hull at the port for the winter. Although it may seem difficult to describe

the machines of the nuclear as brittle (some of them weigh in excess of 100 tons), they are handled as though they were Chinese porcelain vases. Acquaintance with the construction of the sixth power block begins at the warehouse. The separators-steam reheaters, the tanks for the emergency cooling systems of the area, the heat exchange equipment, and others have already arrived from the Soviet Union. This is only part of the large assemblies for the sixth power block. The purpose of the visit to the warehouse by V. Podgurskiy and his Bulgarian colleague Ventsislav Medovinski, deputy director of the Investor's Control Directorate, was in order to check the way the already arrived equipment was stored. On the way to the warehouse the car was stopped by a crane which was loading parts for block number five. With every passing day, the tension at the warehouse is mounting steadily. The number of machine units for the first 1000-megawatt turbine is diminishing with every passing day while with increasing frequency we see equipment marked "Sixth Block."

The block itself is already rising several meters above the ground. We can already see the outlines of the transportation hall and the columns of the machine hall. The powerful Demag crane, which lifted the dome of block number five, is already waiting its turn for the construction of the new reactor.

This will be a serious test for the power workers and builders. The turbine of the fifth power block must be started up before the 13th BCP Congress. This will be accomplished by releasing the steam from block number four. The signaling bulb will flash and electricity will be supplied. The measuring instruments will indicate the pressure and temperature in the turbine units. The people are confident that the tests will be successful.

The sixth power block will the same and built like the fifth. It will have the same power and same design. However, its completion deadlines are shorter. The Bulgarian workers have already gained experience. Thus, for example, an assembly line has been set up for the building of the walls which will be around the sealed area surrounding the reactor. All operations are being done on the site. After that the finished panel will be lifted and positioned. The work will be done faster and with lesser problems.

Even now the line is not idle. One-half of the 12 walls for block number six have already been brought here. For the time being, they are no more than sheets of iron. The assembling is not advancing all that rapidly but the welders in the brigade of Hero of Socialist Labor Ivan Radev are already at work. In few a months the panels will be closed like the petals of a flower at night and will conceal the heart of the block--the nuclear reactor.

Although some time remains before the fifth block will be started up, already now a group of Soviet specialists are concerned with problems of finding operational cadres. Vassiliy Sharayevskiy, secretary of the party organization of the group of specialists in control-measuring instruments and automation, said:

"We would like to leave behind well-trained cadres. This can be achieved two ways: we have organized a cycle of lectures for theoretical knowledge of brigade leaders and technical managers; we work with the practical workers

together with tools in hand at the construction site. Currently a number of Soviet people are working in the international brigades in assembling block number five. A technical school for nuclear power industry operates in Kozloduy. We are helping the students and perhaps we shall contribute for the future power workers to develop even greater love for their profession."

New Technology at Belene

Sofia ZEMEDELSKO ZNAME in Bulgarian 8 Feb 86 p 1

[Article by Z. Lalova]

[Text] The use of a new technology was undertaken in making the "gravel cushion" at the foundations of the first power block of the future nuclear power plant in Belene. Based on the system developed by Vasil Adamov, chief designer and head of shift at the project, a team of specialists experimented and applied an entirely new and efficient method for the study and reinforcement of the level. Previously, this required four drills per meter, with anchors and subsequent concrete pouring. This meant that 2 days per drill and 1 day for anchoring were needed. The waiting period for the concrete to harden was 7 days, after which the work could continue. Under the new method, prefabricated construction panels are used. In a single day they are used to make frames in which the concrete is poured. The work is conducted on an assembly line basis, meter after meter, without obstructing the hardening of the concrete. Through this method 44 meters have already been covered. The development has been submitted for approval as a rationalization. Savings will total 60,000 leva. The indirect effect is much greater, for this method allows a rapid study of the nature of the bearing horizontal plate, i.e., of the soil on which the foundations are being poured.

5003
CSO: 5100/3022

NEW SYSTEM FOR STORING RADIOACTIVE WASTE

Budapest HETI VILAGGAZDASAG in Hungarian No 2, 11 Jan 86 pp 52-54

[Interview with Zoltan Nagy and Antal Dobrosy by Florian Mezes: "Lattice Billions. Storage of Radioactive Waste at Paks"; date and place not specified.]

[Text] With a single idea, a 3-billion forint savings was made in the state budget by two workers of the Powerplant Investment Enterprise: Zoltan Nagy (age 61), the chief of the primary mechanical engineering group, and Antal Dobrosy (age 47), the director of the nuclear department of the chief engineering group. The savings were made by not having to build a new storage facility for the used, radioactive fuel elements which come from the nuclear power plant at Paks, because due to an innovative structural solution, space could be better utilized in the current facility. We talked with the two investment experts about the development of the idea and the problems associated with building the so-called high density lattice.

[HVG] Although the total investment at the Paks nuclear power station has reached 75 billion forints, a savings of 3 billion is sufficiently large that one's attention is immediately drawn to it. What was needed for this savings to come about?

[Nagy] When the investments were started at Paks, word was out that the Soviet Union would accept the burned-out, used fuel elements after 3 years' storage in Hungary. In 1979, however, it was announced that as from other Socialist states, the elements will be accepted only after 10 years' storage. As a consequence, we would have had to build another, intermediate storage facility for the four reactor blocks in which the about 5000 burned-out elements generated during the 10 years would have been stored. The Soviet partner had given us the plans for the intermediate storage facility, according to which the cost of construction would have reached 3 billion forints. We have saved this much money by doubling the capacity of the present "resting" storage facilities with the help of the high density lattice, in which we now can store not 3 but 6 years' worth of burned-out heating elements coming from the nuclear reactor. In reality we saved more than 3 billions because if we look at the value to the economy in 1991 of a current 3 billion forints, the savings would reach 5 billions. In the meanwhile the technical possibility has presented itself of putting the burned-out elements into a dry storage facility after just 5 years' wet storage. The cost of this construction is

one-half that of the type considered earlier. Even if the Soviet Union would have adhered to the 10-year term for accepting the elements, we would have saved 1.5 billion forints. But in February of last year, the Soviet partner has agreed to accept the elemnts after 5 years' storage--probably because it will also initiate dry storage--so we didn't have to build the dry storage facility either.

[HVG] Both of you signed the 1983 study in which you stated that instead of the new storge facility the old one should be modified with a honeycomb-like high density lattice. Whose idea was this method?

[Nagy] The idea rests on data from the literature, on our experiences in building nuclear power stations, and on earlier Hungarian research. This structure has been used in the West for a long time so that we had access to information gathered from experience. In the Socialist countries,the high density lattice occurs only as a word in encyclopedias, and Hungary is the first place where it has become reality.

[HVG] Which of you had the idea that this could be done?

[Nagy] I called over my colleague and told him thatI was old enough tostart something that might not work out. My experience has shown that it is very difficult to carry out an innovative solution to a problem because of the stiff resistance one usually encounters. My colleague said that the suggested solution is necessary and well-founded, and that it should be put into effect. If we do it together, we will be able to do it.

[HVG] If in the West this is a proven method, were there any risks?

[Dobrosy] If we had not finished on time, then every day's delay would have caused a loss of 10 million forints to the economy. If we had not been able to remove the used heating elements, because we had no place to put them, we would have had to shut down the whole power station.

[Nagy] What's more, this extra expense of 10 million forints is true only if we calculate with a kilowatthour cost of 1.5 forints. In reality, one has to take into account that every kilowatthour of energy produces 60-70 forints worth of products, depending on how it is used.

[HVG] Were only the two of you involved with the realization of this idea at the Enterprise?

[Nagy] We involved the whole primary mechanical engineering group so that it is more correct to say that it was the group that declared in writing in October 1983 that this would be the better solution, and in one year proved that the written projections were correct. The first construction contracts were signed last May.

[HVG] What was the total cost of producing and building the high density lattice?

[Nagy] For the four blocks, 354 million forints, including everything.

[HVG] The new storage system was ready 3 weeks before the planned deadline. What sort of feeling was it to know that you had saved such a large sum so inexpensively?

[Nagy] We look at things from a technical point of view. Of course, we know that 3 billions are 3 thousand millions, a very large number, and we are happy that we could save this much. We are also proud that we were the first to execute this project in a Socialist country. But what we esteem the most is the technical and organizational activity which was necessary for solving the problem. Great technological results can only be achieved if we are in the clear about the general direction of technological change and there is willingness on the part not only of the technical people but also the workers of the financing and management organizations. I believe that we are here precisely so that we can save sums of this size by coming up with better technical solutions.

[Dobrosy] These days in Hungary, we talk a lot about the changes in the structure of production, but a lot less about what the requirements for these are. Ours was the rare situation when we, the users, convinced the enterprises involved in the production of the high density lattice that they need to transform the structure of their production. After all, the lattice is made of a special kind of boron steel with an accuracy of a fraction of a millimeter. At one of the manufacturers, in the factory of the VEGYEPSZER at Tiszakecske, even the industrial application of plasma welding had to be introduced to the workers, a first in Hungary. The introduction of new techniques and technologies will of course profit the manufacturers as well, but it cannot be said that such structural change was of vital interest to them, so they had to be convinced to proceed this way. Only by convincing the State Development Bank, the Power Station and Power-Distribution Office, the Central Physics Research Institute and other concerned organs were we able to achieve our goal.

[HVG] How could you urge the various enterprises to cooperate? Technical devlopment alone does not seem much of a motivating force in Hungary.

[Nagy] We've been working in the field for a long time and our circle of acquaintances is fairly large so we were successful in convincing our partners to start this project. Money was certainly no motivating force for the workers in the factories or here in the main engineering group because nothing was promised ahead of time. It is true that we were at the manufacturing sites on Saturdays and Sundays too, involving almost every one of our colleagues here, and also the designers, especially in the last few weeks. As it turns out, the manufacturers and our workers have received compensation, due to the preferential treatment accorded the power station at Paks. We could get some money for paying premiums as well.

[HVG] From what we have discussed, it seems that you did not face much resistance within your own company. After all, it was your duty to find a new, better solution.

[Nagy] Our duty was to build the intermediate storage facility.

[HVG] Did your work run counter to your duty?

[Dobrosy] It is a moral responsibility to be the champion of technical innovation. One should not follow assigned tasks blindly.

[HVG] How much compensation did you receive?

[Nagy] Let me not name a sum but just say that we received enough to be satisfied. Not as much of course as we would have, had we presented the idea as an innovation. Then we could have received millions.

[HVG] Could it have been accepted as an innovation? After all, as you have said, this solution has been used in other countries for a long time.

[Nagy] Yes, probably we could have prevailed. We thought though that it would not be right to accept money meant for innovations. Especially, since already at the discussions concerned with the investments for the power station the question had come up of equiping the "resting pools" with high density lattices. At the time this could not be done because of a lack of engineers, construction materials, special boron steel--this cannot be found in Hungary or in any other Socialist state--manufacturers and money. But there were no coercing conditions as there are now because we were counting with a return of the fuel elements in 3 years.

[HVG] What benefit does your enterprise derive from having developed such a modern manufacturing capacity?

[Nagy] The Kraftwerk Union firm, which delivered the equipment and materials, had at the time offered for sale the manufacturing license. Unfortunately, we could not choose this solution--the procedure for licensing in Hungary is so time-consuming and we were tied to deadlines--because waiting would have presented unsolvable difficulties. Since that time we have obtained permission for the export of the so-called absorbing casings, and we have made a cooperative agreement with the Kraftwerk Union for the joint manufacture and marketing of casings for which this company would provide the necessary materials. If such export activity would become reality, then as exporters we would earn a share. For the time being, however, nothing is certain because the casings used in the storage facilities of Western nuclear power stations are square-shaped, conforming to the shape of the elements used there, while in the nuclear power stations of te Socialist countries, and thus in Hungary, hexagonal units are used. The production facilities would have to be retooled, necessitating further imports. No decision regarding this has been made yet.

Picture Headings

1. Zoltan Nagy and Antal Dobrosy.
2. The installation of the absorbing casings at Paks. One counted on transporting the burned-out fuel elements to the Soviet Union every 3 years.

12846
CSO: 5100/3018

OPPOSITION TO NUCLEAR POWER PROGRAM REPORTED

'Strong Nuclear Lobby'

AU062058 Belgrade NIN in Serbo-Croatian No. 1835 2 Mar 86 pp 18-21

[Dragan Jovanovic article: "Nuclear Power Stations in Public"]

[Excerpts] The Yugoslav nuclear story may begin back in 1948, when our nuclear institutes were formed, or 1958, when the incident occurred in Vinca. We would not err, either, if we began the story in 1974, when the construction of the Krsko nuclear power station of 632 MW began. But the story may also begin 4 or 5 years ago, when a plan was drafted for the construction of four power stations, although the construction of as many as 20 nuclear power stations had been thought about earlier. Somewhere there, this Yugoslav story suddenly becomes a proper nuclear thriller, in which Yugoslavia has a "rope tied around its neck," which was so dramatically pointed out by Dr Dragisa Ivanovic at the LCY Central Committee session last week.

Dejan Dimov, higher counselor in the Yugoslav Chamber of Economy, stated for NIN last year that there exists in Yugoslavia a strong nuclear lobby which has found a specific form in our country and works much more efficiently than in the West. "Our political system," Dimov added, "is being misused in the present situation, so that individual anonymous, but very powerful groups, political and scientific in nature, not only manipulate, but also exert full control over, information which as a rule, I don't know why, is strictly confidential, so that one cannot discuss it.

In this way this lobby not only succeeds in directing investment in energy but also in deluding the highest organs in this country. The world's big traders appear to be best prepared to find 'janissaries' in our ranks," Dimov said on that occasion.

To what extent these warnings have been correct may be seen from the sequence of events: until immediately before the bids for the construction of four nuclear power stations have been invited, all the important information about the Yugoslav nuclear program was under the "strictly confidential" classification, and was thus journalistically unusuable even if journalists could get hold of it.

About Charms and Advantages

One of the rare (if not the only) public and organized appearance by most select nuclear advocates took place by the end of last year in Belgrade, at a discussion of the Federation of Engineers and Technicians of Yugoslavia.

At about the same time, at the end of last year, NIN organized a roundtable conference on energy.

Excitement and involvement of the public was caused by a television debate conducted on the "Cinema-Eye" program at the beginning of this year. In the meantime, matters have been "heating up." In Belgrade one hears accusations that the opponents of the nuclear power stations and journalists who ask questions are "a branch of the Greens financed by the CIA."

A similar accusation comes from Zagreb. In an interview in VJESNIK, Vjekoslav Srb, president of the Committee for Energy, Industry, Mining, and Crafts of the SR of Croatia, in defending nuclear energy says the following: "It seems that other behind-the-scenes games stand behind the stories about the nuclear power stations and the recent flood of reports on their alleged unreliability. It is, after all, known that the greatest opponents of nuclear power stations are multinational oil companies."

Nuclear Program Defended

LD112146 Belgrade TANJUG Domestic Service in Serbo-Croatian 1635 GMT 11 Mar 86

[Excerpts] Belgrade, 11 Mar (TANJUG) -- At its session today the Committee for Internal Policy of the SFRY Assembly, Federal Chamber endorsed the draft document on the strategy of the SFRY's technological development. Delegates to the committee supported the orientation toward a united and organized search for solutions to the issue of the country's technological development. The need was emphasized for professional and efficient work to outline and implement the strategy.

In reply to a delegate's question, Rade Pavlovic, president of the Federal Committee for Energy and Industry, stressed that the nuclear plants construction program is a result of careful and professional work and is based on an analysis of Yugoslavia's realistic possibilities and development needs.

An "antinuclear" atmosphere has been created in the country because some individuals are juggling with inaccurate facts while others have succumbed to various prejudices, Pavlovic said.

According to an analysis conducted by the Federal Committee for Energy and Technology, Yugoslavia cannot secure enough electricity on a long-term basis for other energy sources. The alleged dangers of nuclear power plants are exaggerated: There have so far been no casualties caused by the use of nuclear energy (the casualties however did occur in research institutes during the research period).

The committee decided that this issue should be discussed in a calm, professional, and democratic way, without making either negative or positive preliminary assessments which could prejudice the whole debate. Delegates alos discussed a document prepared by the Federal Executive Council which deals with the situation in fire prevention. Delegates agreed that the situation in this sphere is very bad and at the same time endorsed the government's numerous measures designed to improve it.

Nuclear Waste Dump Rejected

AU111954 Belgrade Domestic Service in Serbo-Croatian 1400 GMT 11 Mar 86

[Text] The citizens of Slavonija do not want a dump for radioactive waste from nuclear power plants to be built on their territory, something which is mentioned as a possibility in the draft long-term zoning plan for Croatia. In this respect remarks voiced in several communes of western Slavonija have also been accepted at the session of the Executive Council of the Community of the Osijek Communes in its discussion of the guidelines for zoning policy in the Slavinija-Baranja region up to 1990.

It was reiterated that Slavonija is the greatest wheat producing area in Croatia, and that it is very rich in water. It is in the very hills that have natural, drinking-water springs that the location of the nuclear waste dump is planned.

/9604
CSO: 5100/3026

CNEA CHAIRMAN ON FUTURE OF NUCLEAR PROGRAM

PY101247 Buenos Aires BUENOS AIRES HERALD in English 9 Mar 86 p 9

[Article by Roger Atwood]

[Text] With its two reactors, Atucha I and Embalse, Argentina now has 11.4 percent of its electric energy needs supplied by nuclear power, the fourteenth highest percentage in the world. Since the 1950s, Argentina has been the undisputed nuclear leader in Latin America, with a range of nuclear first to its name.

Still, severe budget cuts have taken their toll. The Atucha II plant is four years behind schedule, and the Arroyito heavy water plant will not be finished until 1988 at the earliest. Production at the Pilcaniyeu enriched uranium plant is at a fraction of capacity, and work at the Tandar heavy ion accelerator plant has come to a near standstill.

Argentina's nuclear potential also extends to weaponry. In December 1983, director-general Hans Blix of the International Atomic Energy Agency, said after touring Argentina's nuclear facilities that all that stands between Argentina and the bomb is "a decision of state."

World apprehension remains high, despite the government's insistence that it is not interested in making the bomb.

National Atomic Energy Commission (CNEA) director Alberto Constantini, a retired nuclear engineer himself, spoke with the HERALD recently.

[Atwood] In light of budget cuts, what is the future of Argentina's nuclear programme?

[Constantini] In 1986, as in earlier years, our (original) budget was not sufficient to carry through on the largest projects that we're constructing, Atucha II and the Arroyito heavy water plant. But by decision of President Alfonsin, we have resolved to finish Atucha II by 1992 and the heavy water plant by 1988. I would say that the 1986 budget for these plants is sufficient to keep them moving along at the rate they should have had in earlier years. At Atucha II, you can now see work moving at a faster pace. Cranes are more active and there are more workers--in short, a project in progress. And I found businessmen there enthusiastic, saying that this is a new stage.

[Atwood] Is there still a danger that top-level technicians will leave the country if there are new budget cuts?

[Constantini] My problem is not budget cuts. Although it's true that we have not been able to give better salaries because of government policies, I have attended to technicians' needs by maintaining active laboratories with all elements they need, libraries, and trips abroad. But we must not underestimate that real salaries can come up at any time. Up to now, engineers have not left, but we have to treat the scientist with realism. We can't exaggerate his love for science.

[Atwood] Has the Radical government vacillated on the nuclear plan?

[Constantini] That is a mirage. In President Alfonsin I have noted concern for economic problems, but never vacillation on the philosophy of the nuclear plan. The nuclear programme had a golden age, an age of euphoria that lasted until about 1980. In those days, there was lots of money, but we lost count of much of it and now we have to pay. When I received CNEA (in 1983), Atucha was six years behind schedule because of delays left over from the military years. Last year I proposed to President Alfonsin that if we're not going to finish Atucha, that we should say so to the country, and he said "No, no. This project is going to get finished." And I told him to tell that to (Economy Minister Juan) Sourrouville and (Treasury Secreatry Mario) Brodersohn, who hold the keys to the treasury. And so at a meeting at Olivos, Alfonsin acted as my defence attorney. The support of the President was crystal clear. But I have never found in anyone a pre-disposition against the nuclear programme, except for a few ecologists who are ideologues.

[Atwood] How are prospects for exporting nuclear technology?

[Constantini] Relatively good. In Peru and Algeria, we are constructing reactors. Our country is well looked-upon abroad in the nuclear field, and our technology and technicians are not underestimated in the world. That is very important and we must not lose it.

[Atwood] Does CNEA have any plans to develop nuclear weapons?

[Constantini] Absolutely not. The technology needed to build a bomb is known by any country well enough advanced in the field. In no way whatsoever is Argentina thinking of any war-like use of nuclear energy, no bombs or missiles, nothing, for philosophical reasons and reasons that have to do with international politics. I don't aspire to compete in the bomb with the more advanced countries. I think that the bomb for us, apart from being outside the country's philosophy and traditions, is a stupid and negative luxury for the world. With the risk, danger, and threat that nuclear weapons pose, we would never do it.

[Atwood] Aren't there some circumstances under which Argentina might use its technology to build a bomb?

[Constantini] No, none. We will not fight against humanity. We are in favour of humanity.

[Atwood] Is Argentina prepared to sell information to other countries which could be used to build a bomb?

[Constantini] In no way. We know the technology because the CNEA technicians are at a very high level. But never was that technology put on the market, much less exported.

[Atwood] But doesn't Argentina derive security benefits by the mere possession of the technology to build the bomb?

[HERALD] We have the technology that any nuclear scientist has (to build the bomb). It is not that complex. What you need are certain materials, which Argentina has access to in certain moments. But Argentina has not started the conceptual or basic development. If I took five nuclear technicians and said, "In six months, I want the basic engineering," I have no doubt they would come up with it. The only thing you would have to do is give an order and put the team to work. But these brains we have in CNEA might even resist carrying out such orders, even if they were given, because they're not bent on working in that area either. There may be many people in CNEA who could work in that area (nuclear weaponry), but they have never done it. It's a road that exists but that Argentina never wanted to take, not with good or bad governments, democracies or dictatorships.

[Atwood] Why won't Argentina sign the Treaty of Tlatelolco (establishing Latin America as a nuclear weapons free zone)?

[Constantini] That is another problem. Argentina did not ratify it because we considered it discriminatory and because it affects our sovereignty. The treaty did not disarm those who were armed; it kept the strong strong and the weak weak. If Tlatelolco did not achieve disarmament among the most advanced countries but did keep the disarmed countries disarmed, I wonder what the purpose of it is. It is openly discriminatory, and for 15 years Argentina has said it will not sign. It is an old philosophic decision that has nothing to do with our nuclear policy.

[Atwood] What has become of Argentina's competition in the nuclear field with Brazil?

[Constantini] I would say there is no competition. Brazil is indebted, it too made political mistakes, but it has managed to construct an infrastructure that allowed it to pull itself out of depression more easily than we. We ran up a debt by spending the money mainly in speculation, Brazil spent in on infrastructure. I see Brazil as a country that has been more of an example than some model that we have to feel bothered by.

/7358
CSO: 5100/2053

YRIART REPORTS CNEA FUNDS SUBSTANTIALLY INCREASED

Buenos Aires AMBITO FINANCIERO in Spanish 2 Jan 86 p 20

[Article by Martin F. Yriart]

[Text] Last November, the National Atomic Energy Commission [CNEA] billed the Unifed Billing Office [DUC] $14 million for electrical energy it had supplied.

During that month the two nuclear power plants, Atucha I and Embalse, operated at full capacity, and they are continuing at the same level today, saving greater Buenor Aires from new summer brownouts.

The fact should not be surprising, because nuclear power facilities are designed to operate as primary stations, owing to their high rate of availability and to the need to optimize their capital expenses and the cost of fuel (which is consumed even when the plant is not generating electricity).

However, within the current policy governing electrical generation formulated under energy transmission of super-secretary, Conrado Storani, the roles have been switched. In fact, in the strategy formulated by the radical government for electrical energy production, hydroelectric plants received top priority, so that the DUC for the last two years has kept the two nuclear power plants operating at less than 50 percent of their total capacity, at the time in the investment timetable when it was being decided to postpone finalizing Atucha II.

This decision was made possible owing to the fact that total energy demand has not grown at the anticipated rate, while new plants were being brought on line which considerably increased the technical reserve of the system. At the same time, in the Uruguay and Limay river basins extraordinary levels of hydroelectric output were being produced. But now, because of an unforeseen circumstance--but not therefore less predictable--a whim of the weather, the Chocon and Salto Grande [power plants] have been practically without water, and their power, normally reserved for peak consumption times, is being driven by an eyedropper.

The episode should be sufficient warning to the formulators of official energy policy. Owing to the specific circumstances of Argentine energy

structure, the nuclear source is the most reliable of all those available for electrical energy production throughout the public system because it is not subject ot the seasonal changes in water supply, nor to the complexities of production, transport, international prices, and the competing demands for conventional fuel oil and gas. A recent study done by the International Atomic Energy Organization indicates that the coefficient of availability (which measures the reliability of delivery) of nuclear power plants is improving year after year throughout the world. Production costs are decreasing proportionately.

Meanwhile, CNEA is receiving a healthy infusion of funds to strengthen a budget which in recent weeks has repeatedly caused headaches in the face of enormous construction contracts such as Atucha II and the heavy water plant at Arroyito which have been virtually paralyzed since 1983.

13106/12948
CSO: 5100/2038

PAPER DISCUSSES PROGRESS ON ATOMIC BOMB PROJECT

PY0501S0 Sao Paulo FOLHA DE SAO PAULO in Portuguese 2 Mar 86 p 2

[Editorial: "Continent Without the Bomb"]

[Text] The hypothesis that Brazil may soon be in the technological position to build an atomic bomb is reinforced by some recent reports that the country will have the capacity to build nuclear missiles by 1991.

The consensus today is that the manufacture of the Brazilian atomic bomb, as it is called, has become a political rather than a scientific question. Statements in that regard have been made by the Armed Forces chief of staff, Admiral Jose Maria do Amaral Oliveria, and his predecessor, Lieutenant Brigadier Waldyr Vasconcelos. The manufacture of the bomb has been constantly discussed at the National Security Council (CNS), according to reports by Brigadier Hugo de Oliveira Piva, director of the Aeronautics Technical Center (CTA). Reports that a parallel nuclear program is secretly being developed in the CTA are frequently heard.

Progress has been possible in the areas of technology and personnel specialization thanks to the strictly civilian nuclear program carried out in cooperation with the FRG and by the secret research program. This, sooner or later, will bring the knowhow needed to manufacture the nuclear components for building the bomb, such as enriched uranium and plutonium, the lack of which is currently a major obstacle to the construction of the Brazilian atomic bomb.

The hypothesis that Brazil has chosen to join the nuclear club presupposes the need to master basic technology for the production of a transportation vehicle for the atomic bomb; that is, a missile. In such an endeavor, Brazil could even do without the transfer of Chinese technology, because it has the rocket technology to place four Brazilian-made satellites in orbit in approximately 2 years. With minor modifications, the same rockets could carry a nuclear device, thus filing one of the last requirements for a Brazilian atomic missile.

It can be seen that the moment is fast approaching when, having mastered the necessary technical knowhow, Brazil will have to make the momentous decision. Brazil will then have to decide whether to maintain its peaceful image or join the atomic weapons club, with all the international consequences -- even that of becoming a potential target of the bomb -- especially in this continent. No doubt, if the latter choice is made, a nuclear race will be under way in this impoverished and indebted Latin America. A fundamental step to preventing the nuclear race in the continent would be given if Brazil publicly renounces the building of an atomic bomb once the technology has been mastered. Another step would be to seek an agreement on mutual inspection with all the other Latin American countries that are developing a nuclear program.

A true peace pact will thus be secured, as has already been proposed by President Raul Alfonsin. It is in the interest of the countries in this continent, especially of Brazil and Argentina, not to get sidetracked by strategic considerations that have no place in the scale of economic and social priorities. Such an agreement would at least be a concrete act of protest against the fatal logic of an arms race in the eyes of the world.

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CSO: 5100/2049

BRIEFS

ANGRA-I TO RESUME SERVICE--The Angra-I nuclear power plant, which has not been operating since January, will resume operations at the end of May. Marcio Costa, director of the nuclear section of the Furnas Electrical Power Plants, has reported that by then one-third of the burnt fuel will have been replaced, as well as the 48,000 steam condenser tubes that had suffered sea water corrosion problems. The remaining equipment will also have been checked and repaired. Costa hopes that these will be the last large-scale repairs to be made in the plant, which will then be technically and operationally capable to perform at full capacity with total security. The cost of the repairs and general check-up will be $50 million, $30 million of which will be paid for fuel. The Angra-I plant must start operating soon in order to reduce the load on the Santa Cruze thermoelectric plant, which, as of April, will have to operate at full capacity to meet the energy demands of the southeastern region. According to the director, the fuel cost at the thermoelectric plant is $160 million per year, while the fuel cost at the Angra-I plant is $30 million. [Text] [Rio de Janeiro O GLOBO in Portuguese 18 March 86 p 26] /9365

CSO: 5100/2054

UN ENVOY ADDRESSES GENEVA DISARMAMENT CONFERENCE

New Delhi PATRIOT in English 28 Feb 86 p 7

[Text]

London, Feb 27 (PTI)—India has called for commencement of 'earnest negotiations' on various aspects of a treaty banning all tests of nuclear weapons which has found overwhelming international support.

Recalling that a great deal of international attention has recently been concentrated on the question of a comprehensive nuclear test ban, Indian ambassador to the UN at Geneva Alfred Gonsalves told the disarmament conference yesterday that the Soviet moratorium on such tests and the six-nation invitation to all nuclear weapon States to observe a moratorium for 12 months were noteworthy developments in this regard.

Mr Gonsalves said notwithstanding the disappointing negative votes of some of the nuclear weapon states, India was of the view that the conference on disarmament should harness the wide confluence of views among the vast majority of the nations and commence negotiations on a treaty banning for all times all tests of nuclear weapons.

Rejecting the arguments of those who were opposed to such a move, Mr Gonsalves told the conference that it was disconcerting to hear from a state possessing one of the largest nuclear arsenals that continuation of nuclear testing is a key element in its security and that a test ban can only be viewed as a long-term goal to be envisaged if at all following substantial reductions in nuclear arsenals.

He also dismissed as 'entirely groundless', the argument that nuclear tests are necessary to buttress the security policies of one military alliance or to maintain the credibility of so-called deterrence. "We do not see how carrying out more nuclear tests is essential, especially when the existing nuclear weapons with the super powers are, on each sides admission, adequate to deter the adversary", he added.

Referring to the question of monitoring any covert tests after such a treaty, the Indian ambassador said the efficacy of national and international seismic monitoring arrangements was by scientific standards adequate for effective verification. These scientific methods can, moreover, be very easily and speedily upgraded, he added. He recalled that the Soviet Union had acknowledged the need for an effective verification regime and agreed to on-site inspections too.

Mr Gonsalves emphasised that if the super powers are committed not to achieve military superiority over one another and if their existing weaponry ruled out the feasibility of winning or fighting nuclear war, continuation of nuclear testing cannot play any role in promoting the security of either of them. "The resultant need is to abandon nuclear weapon tests through an act of enlightened political will", he added.

India, he said, welcomed the latest proposals put forward by Soviet leader Mikhail Gorbachyov as they have further removed obstacles in the way of a Nuclear Test Ban Treaty. "We appreciate the Soviet decision to extend the moratorium on nuclear testing by three months", he added.

He expressed the hope that this gesture would be reciprocated by the United States and that the moratorium can be periodically extended while business-like negotiations on a comprehensive test ban proceed. "Nothing would be more befitting to the spirit of Geneva than the commencement of detailed negotiations on a comprehensive nuclear weapons test ban with the conference on disarmament", he added.

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CSO: 5150/0081

IMPORTANCE OF INDIA DECLARING ITSELF NUCLEAR POWER

Bombay THE TIMES OF INDIA in Engli. 1 28 Feb 86 p 1

[Article by K. Subrahmanyam]

[Text]

ADDRESSING the 27th party congress, the Soviet leader, Mr. Gorbachov, has proposed a conference of five nuclear powers to discuss disarmament and international security issues.

The five powers are the USSR, the US, China, Britain and France, the Yalta powers all of which are permanent members of the security council.

While Mr. Gorbachov's efforts to bring about elimination of nuclear weapons and measures contributing towards achievement of disarmament deserve to be fully supported, India cannot overlook the full implications of his proposal to convene the five-power conference.

It has very serious consequences for the international system, the non-aligned movement and India in particular. And it does not look as though these considerations have been given adequate attention in Moscow.

The present world order is the result of two international big power settlements. The first one was the Yalta conference among the U.S., the USSR and Britain, in which they devised the post-war system and the United Nations with today's five nuclear weapon powers wielding the veto.

India and the developing world had no say in the matter and even the veto for China was an act of charity on the part of the then U.S. president.

The second act in the laying down of the present international order was the imposition of the iniquitous nuclear non-proliferation treaty (NPT) in 1968 (not accidentally by the same three Yalta powers) which fitted the international system into the straitjacket of the nuclear weapons cult and made the nuclear weapons the prime international currency of power.

NAM STRUGGLE

India protested against this dangerous cult and stayed out of the nuclearised global order. Indeed, it led the non-aligned world in the struggle against the nuclear weapons cult and rejected the approach of arms control which, along with the NPT, constituted the legitimisation of nuclear weapons as the international currency of power.

The struggle of the non-aligned was for elimination of nuclear weapons, for delegitimising them and declaring their use and threat of use as a crime against humanity. India, along with Mexico, proposed a convention to outlaw nuclear weapons in the U.N. second special session on disarmament. This was supported by the non-aligned nations and the socialist bloc including the USSR and China. The only opposition has come from the NATO countries (except Greece).

Mr. Gorbachov's proposals of January 15, 1986, for the elimination of all nuclear weapons by the year 2000 A.D. signified the Soviet Union's radical departure from the hitherto accepted wisdom that nuclear weapons could not be disinvented and hence arms control was the only feasible approach

while disarmament was not. It demonstrated that the USSR had been converted to the non-aligned approach advocating disarmament and elimination of nuclear weapons.

Once such a proposal was put forward by one superpower, the other is unable to reject it outright. Hence even President Reagan has agreed that the idea is basically good.

GHETTO STATUS

In these circumstances, a conference to consider nuclear disarmament and international security, confined to only five nuclear weapon powers, will amount to a major step in reordering the present international order. Is India going to allow itself to be left out of this end and watch from the sidelines the five nuclear weapon powers redesigning the international system without one sixth of humanity within the Indian nation state and the rest of the developing world having no say in it all?

Will it not mean freezing the Yalta mould for many decades to come and treating the developing and the non-aligned world as the ghetto of the international system?

This is the issue arising out of Mr. Gorbachov's proposal. It is quite likely that the strategies, the Euro-centrists and the nuclear weapon cultists among Mr. Gorbachov's advisers have not pointed out to him the implications of his proposal.

It is to be recalled that in the fifties, when Mr. Khruschev proposed a major power summit, he included India in the nations to be invited. That was one more reason for the Chinese to be incensed against him.

'PROCLAIM N-POWER'

If the entry fee for this club of powers, which will have an effective say in reordering the international system, is possession of nuclear weapons then India should, for this purpose, immediately consider proclaiming that it is to be counted now onwards as a nuclear weapon power.

There is a precedent for this course of action. Towards the end of second World War, after the Yalta conference when the U.N. structure was being finalised and it was clear that only the countries that fought the war against the axis powers would have an effective say in it, a number of Latin American countries, which till then had been neutral, declared war on Nazi Germany and joined the allies.

In the same way, let India declare itself a nuclear weapon power in order to have an effective say in the forthcoming summit. 'Future generations will not forgive us if we let this opportunity go by.

Mrs. Indira Gandhi and her set of pussillanimous advisers threw away the opportunity in 1967 though Dr. Bhabha worked hard to give India that option through his underground nuclear explosion project. Those who forget the lessons of history will be condemned to live it again.

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CSO: 5150/0080

DEFENSE OFFICIAL CITES DANGER OF N-ARMS TO THIRD WORLD

Bombay THE TIMES OF INDIA in English 24 Feb 86 p 14

[Text] THERE is a much greater chance of the use of nuclear weapons on the territories of developing countries as the big powers chart out new strategies of intervention, and coercive diplomacy.

This possibility has been brought out in a study "developing countries and nuclear issues," by Air Commodore Jasjit Singh, deputy director of the institute for defence studies and analysis (IDSA).

The stakes and interests of the developing countries in control of nuclear weapons assumes greater importance in view of these strategies by the developed countries and nuclear powers, according to the study.

Citing empirical evidence, Air Commodore Jasjit Singh says, of nearly 160 major armed conflicts since World War II, an overwhelming majority have taken place in the territories of developing countries, especially in Asia and Africa.

Developed countries intervened directly in about 73 per cent of the cases. Indirect interventions by developed countries in the form of arms supplies, political moves, or threat of use of force were present in some form or the other in all the armed conflicts.

The study says two super powers have resorted to demonstrative use of force without war on over 426 occasions since world war II, the target and focus of the threat has mostly been developing countries.

There has been a perceptible increase in the strategy of resorting to coercive diplomacy since the onset of the second cold war in 1978.

The study says there have been at least 28 incidents involving threats of use of nuclear weapons all except one (Berlin crisis) related to conflicts and their resolution in the territories of developing countries.

Another aspect of nuclearisation and its far-reaching implications, is the capability of the non-nuclear states to acquire nuclear weapons through clandestine programmes.

Citing an example, the study says "Pakistan is believed to be well on its way to acquiring nuclear weapon capability through similar clandestine means."

It says that transfer of high-technology arms and systems on a selective basis to a developing country, not only creates rapid and significant shifts on the local or regional balances of power, but can have implications in terms of the implicit threat of nuclear weapons inherent in a possible intervention by a developed country.

The study says transfer of arms and technology with dual capability and use, therefore, "creates favourable conditions to support a clandestine nuclear weapons programme by a developing country."

The real threat to the world, especially to developing countries, emanates from the nuclear doctrine legitimised by nuclear weapon powers and the proliferation of nuclear weapons by them.

The study says if the nuclear weapon powers are serious about non-nuclearisation, they must set an example by at least stopping the proliferation of nuclear weapons beyond their territorial limits.

The study concludes since the stakes of developing countries are tremendous, it is only logical that they should be considered a party to any dialogues, discussions and negotiations concerning nuclear arms control and disarmament.

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CSO: 5150/0079

ARTICLE REACTS TO MILHOLLIN ALLEGATIONS ON HEAVY WATER

Bombay THE TIMES OF INDIA in English 5 Feb 86 p 8

[Article by K. Subrahmanyam]

[Text]

MR. Gary Milhollin, currently a scholar in residence at the National Resources Defence Council in Washington, has published a study in which he has sought to infer that India had a shortage of nearly 200 tonnes of heavy water while commissioning the Madras atomic power plants (MAPP I and II) and the Dhruva reactor. He concludes that, in order to start these reactors, India must have illegally diverted heavy water from two other Indian reactors in Rajasthan, under safeguards, and also that India must have imported heavy water secretly from China. He calls upon the Reagan administration to begin an immediate enquiry into India's heavy water programme and to make public what it knows about India's nuclear intentions.

Mr. Milhollin relies on the Indian heavy water production data from a series of articles in *The Times of India* (May 6-9, 1984) written by Mr. Praful Bidwai and also for the information that 100 tonnes of reactor-grade heavy water was transported from Bombay to Madras before the start-up of MAPP I.

Import Estimate

Mr. Balachandran, in an article in the *Indian Express* (November 23, 1985), also concluded that India should have imported some heavy water and estimated the import at 70-90 tonnes. Mr. Balachandran's calculation of shortages is arrived at on the basis of his own guestimates of heavy water production in India—39.3 tonnes in 1983-84 and 55 tonnes in 1984-85.

Mr. Milhollin, on the other hand, proceeds on the basis that the heavy water production continues to be at the levels reported in Mr. Bidwai's articles of May, 1984. Both of them do not appear to have adequately appreciated the vastly improved performance of heavy water plants at Tuticorin, Baroda, Nangal and Kota in the last two to three years.

In the recent Shri Ram memorial lecture, Dr. Raja Ramanna, while declining to give the production figures of heavy water plants, stated that India was *almost* self-reliant in heavy water requirements and that imports of heavy water were either non-existent or *marginal*

Mr. Balachandran enumerates Canada, the USSR and China among the possible suppliers of heavy water to India, while Mr. Milhollin zeroes in only on China since he believes that Canada or the Soviet Union, as signatories of the non-proliferation treaty and members of the London suppliers' club, would not have supplied heavy water to India without international safeguards. Both of them use the term clandestine import and Mr. Milhollin goes further and charges India with apparent violation of her international obligations (without specifying what exactly they are).

India would not have violated any international obligation even if the conclusion on imports is accepted since India is not a signatory to the NPT or any other international contractual obligation. Mr. Milhollin is, therefore, barking up the wrong tree.

Diverting Attention

There appears to be a reason why he does so. The signatories of the NPT and the London suppliers' club have been merrily violating all safeguards and international obligations under the non-proliferation treaty. He wants to obfuscate the issue and divert attention away from the supply side to the recipient side. Therefore it is worthwhile to look at the leakages of materials from signatories to the NPT and consequently the blackmarket in nuclear equipment and materials.

The United States lost over 36 pounds of highly enriched uranium as on October 31, 1965. According to the testimony before the U.S. nuclear regulatory commission it was reasonably certain that this weapon-grade uranium ended up as weapons in Israel. (Incidentally Mr. Milhollin was a former consultant to the nuclear regulatory commission). In 1976 the U.S. General Accounting Office reported that tens of tons of nuclear material was missing from 34 uranium and plutonium processing plants around the country. It is not possible to prove that this material has not been stolen and diverted into the blackmarket.

The gaseous diffusion uranium enrichment plants at Oak Ridge and

Kentucky lost 150 lb. in a short span of five months in 1983-84. In 1979, in the North Carolina plant of General Electric Company an em; loyee stole 65 kg. of enriched uranium in powder form. He was caught and sentenced to 15 years of imprisonment.

In April, 1985, following an anonymous threat, unusually high levels of radioactive plutonium-239 were found in New York city's water supply. Mayor Koch confirmed that PU 239 was introduced into the water supply though not at levels to cause any hazard to the population. PU 239 could have come only from a military facility or a weapon laboratory. A former director of nuclear materials safeguards for the U.S. Atomic Energy Commission once declared that the fissionable materials unaccounted for in three U.S. diffusion plants alone were in tons. A former commissioner of the U.S. nuclear regulatory commission made it clear that the commission's investigation into inventory discrepancies was only a ritual. Nobody really believed in the materials accounting system of the U.S. plants.

Another commissioner of the U.S. atomic energy commission has speculated about a supply stimulated black market for such fissile and other materials. Recently a French journalist was able to conclude a deal in the blackmarket for enriched uranium of weapon grade for 18.7 kg. and a kilogram of plutonium. The seller was prepared to deliver the material within 20 days of payment.

In this country it is not realised that the IAEA only carries out an audit of material accounting balance in those plants which are designated for its inspection and is in no position to verify or check the diversion of nuclear materials by nuclear weapon powers or from facilities which are not under its inspection jurisdiction.

Some of the nuclear weapon states which are party to the NPT have taken a lackadaisical attitude towards transfer of fissile materials, equipment and technologies to favoured non-nuclear client states.

Israeli Arsenal

According to a former CIA deputy director, Mr. Carl Duckett, President Johnson, even while acceding to the NPT, had been informed of the Israeli nuclear arsenal and the diversion of enriched uranium from the U.S. military facility at Apollo, Pennsylvania, to that country. Yet cynically the U.S. got all nuclear military facilities exempted from inspection under the NPT, presumably to avoid detection of such losses and diversions. Till now the U.S. has not thought of invoking the Symington amendment which prohibits aid to countries believed to be making nuclear weapons against Israel. The same favoured treatment has been extended to Pakistan. Though the Symington amendment was invoked by the Carter administration against Pakistan, it has now been waived permanently by the Reagan administration. President Reagan tells Congress that Pakistan continues to persist in its efforts to reach nuclear weapon capability though, according to the U.S. administration, it is still not in possession of a weapon or an explosive device which statement may only be a technically accurate verbal cover-up to describe what is known in strategic literature as the last-wire concept.

Since the last wire is not connected up, the assembly is not yet a weapon and, therefore, the country concerned is certified to have no weapons. The world has taken note of the fact how leniently the Pakistani, Nasim Ahmed Vaid, who attempted to export krytron timing devices out of the U.S. in contravention of that country's export regulations to Pakistani nuclear establishment (project 706), was treated by the American court. The same linient treatment was extended in Canada to the Pakistanis caught in the act of contravening Canadian export regulations for the benefit of project 706.

Pakistan has proved to the world what a sham the non-proliferation commitment of Western industrialised nations is. After the French formally cancelled their contract for the Pakistan plutonium reprocessing plant, the concerned French firm exported most of the equipment to Pakistan via their Italian subsidiary — Alcom. Two Swiss firms Kora Engineering Corporation and Vat, supplied various component systems for the uranium enrichment plant in Pakistan. The irony of it was that these shipments were cleared by Mr. Claude Zangge who prepared the list of equipment not to be exported by

the London supplier's group of countries without IAEA safeguards.

A German firm established the entire fluoridation plant at Multan for Pakistan to convert uranium into gascous uranium hexafluoride. A Dutch company supplied the tubes required for the centrifuges at Kahuta. Pakistan had been running an European office headed by one Mr. S. A. Butt to buy equipment all over Europe for its uranium enrichment plant.

The above illustrations would reveal that there is a very large black-market in special nuclear materials, and equipment required for various nuclear activities, in the Western countries which claim to be subscribers to the NPT. The silence of the Western governments and the IAEA on this issue in spite of all these well-known facts published in the Western media would tend to suggest that these governments and the agency are not ignorant and innocent but connive at these transactions.

Permissive Attitude

Consequently, in the international market place, weapon grade uranium and plutonium, heavy water and equipment to put up reactors and gas centrifuges are all available, thanks to the hypocritical and permissive attitude of the nuclear weapon powers and the associated major industrial powers of the Western world.

From time to time China has also been accused of putting into the market place such materials. The international nuclear black market, as the one in respect of arms sales, is so intermeshed that the buyer need not know which nation is the originator of the material.

This should explain to the naive and innocent, good-hearted and well-intentioned in this country why India is not prepared to accept either IAEA inspection or mutual inspection as satisfactory solutions to the problems of nuclear proliferation.

Even Mr. Milhollin casts aspersions on the IAEA safeguards procedures by hinting at diversion of heavy water from the safeguarded Rajasthan atomic power project (RAPP I). The IAEA inspection team has inspected and satisfied itself on the accountability of every gram of heavy water in those plants and yet that does not satisfy a former consultant to the U.S. Nuclear Regulatory Commission. It is natural for the Western countries to have reservations about the IAEA procedures since they have been running rings round them all these years.

In spite of their being a total break-off in the Indo-U.S. nuclear relationship, Mr. Milhollin claims that the U.S. is India's biggest nuclear supplier. His call to the U.S., Canada and the USSR to suspend further nuclear supplies to India is futile because none of them is currently a supplier. His suggestion to discontinue nuclear trade with China, till it clears itself up in respect of supply of heavy water to India, is not likely to evoke any reaction since the U.S. Congress has swallowed, under the Administration's pressure, even past Chinese help to Pakistan in the design of nuclear weapons and ratified the U.S.-China nuclear cooperation agreement.

Three-Stage Plan

India's nuclear intentions have been made public loud and clear — to proceed with its three-stage nuclear energy programme as spelt out by Dr. Homi Bhabha years ago, with an immediate objective of 10,000 MWE of power by year 2000.

To that one may add what Gen. Sundarji stated while assuming office as Chief of the Army Staff in a message of reassurance to the armed forces. He said that the Indian government would not make the armed forces fight their adversary at a disadvantage in respect of possession of nuclear weapons if that situation was forced upon India. The U.S. is very well placed to answer the question whether such a situation will develop in the sub-continent in the light of their permanent waiver of the Symington Amendment in respect of Pakistan.

/9274
CSO: 5150/0073

STATEMENT SUPPORTS GORBACHEV PROPOSAL ON N-WEAPONS

BK021451 Delhi ISI Diplomatic Information Service in English 1435 GMT 3 Mar 86

["Statement by official spokesman on 2 March, 1986"]

[Text] The Soviet ambassador to the Committee on Disarmament, Dr. Victor Lo Israelyan, visited New Delhi from February 27 to March 2 as a special emissary of the government of the USSR, to explain details of some of the new proposals on disarmament put forward by General Secretary Gorbachev. The Soviet emissary discussed how these proposals could be pursued further in international organisations and through other means.

During this stay in Delhi, Mr Israelyan called on the external affairs minister; chairman (PPC) [Policy Planning Commission]; MOS (EA) [Minister of State for External Affairs]; foreign secretary; and secretary (EAST). The Indian delegation to the talks was led by Shri M. Dubey additional secretary.

The Indian side reiterated India's position that General Secretary Gorbachev's proposals on the elimination of nuclear weapons were bold and constructive. They expressed the hope that these proposals would receive due consideration by the international community and, particularly, the nuclear weapon powers.

The Indian side referred to the recent initiatives in the field of disarmament taken by India. The Indian proposal for a comprehensive ban on testing of nuclear weapons and for a moratorium on such tests as an immediate interim measure was also referred to.

In this context, the Indian side also referred to the details of six-national disarmament initiative.

/9274
CSO: 5150/0077

INDIAN, SOVIET DOCTORS EXPRESS CONCERN OVER NUCLEAR THREAT

Madras THE HINDU in English 3 Mar 86 p 12

[Text]

MADRAS, March 2.

Indian and Soviet doctors expressed their concern over the increasing likelihood of a nuclear war and professed their determination to educate the public on the threat of nuclear holocaust, at a two-day Indo-Soviet medical symposium which began here on Sunday.

Inaugurating the symposium, the Tamil Nadu Health Minister, Dr. H. V. Hande, deplored the escalation of the arms race and the consequent build-up of military budgets, particularly in the developed countries, and said that defence spending took away funds that would have gone to health care and other welfare measures. He suggested that the developed countries should pare their military budgets and pass on the funds to some international body like the World Health Organisation for investing in healthcare projects.

Medical practitioners, as scientists who were in touch with the masses, should generate public awareness on the effects of nuclear war, Dr. Hande said. He hoped that there would be a fruitful exchange of ideas between the Soviet team and its Indian counterparts, and offered the State Government's cooperation in launching a scheme for information exchange on the latest Soviet medical technology for application in Indian hospitals.

'Dangerous time': Mr. Vadim Cherapov, Consul-General of the USSR in Madras, said that the world now faced a difficult and dangerous time, particularly after the "not so encouraging" American reply to the Soviet leader, Mr. Mikhail Gorbachev's proposals for a programme of total elimination of nuclear weapons. Washington had reaffirmed its determination to go ahead with its "Star Wars" programme and the situation called for action from people from all walks of life. He hoped that the day's discussions on "The struggle against the nuclear threat" would promote the international movement for peace.

Dr. Y. N. Belenkov, Dr. A. Kaydash and Dr. A. K. Svichulis, from the Soviet side, laid emphasis on the need for physicians to join the international struggle for peace. The pace had been set with the creation of the International Physicians for Prevention of Nuclear War, which now had more than 200,000 members from 41 countries. Physicians and medical students ought to educate the public on the ill-effects of nuclear war and the prospect of a nuclear winter.

Attitude development: Dr. A. Sankaran, cardiologist, Government General Hospital, Dr. M. Natarajan, orthopaedic surgeon and Dr. R. Janardhanan, Organising Secretary, National Association of Indian Doctors for Prevention of Nuclear War, Pondicherry, stressed the need for doctors here to join the international movement. They said that apart from imparting skills to medical students, attitude development was also important for fostering awareness of the dangers of nuclear war.

A resolution was also passed, affirming the determination of the Soviet and Indian doctors to work in the struggle against the threat of nuclear war.

The meeting observed a minute's silence to respect the memory of the slain Swedish Prime Minister, Olof Palme.

/9274
CSO: 5150/0082

EXPERT TELLS CHALLENGES FACED BY NUCLEAR INDUSTRY

Madras THE HINDU in English 5 Feb 86 p 19

[Text] Some of the biggest technical challenges ahead in India's nuclear programme, lie in the areas of heavy engineering fabrication and materials technology, said Dr Placid Rodriguez of the Indira Gandhi Atomic Research Centre, Kalpakkam.

Dr Rodriguez, head of the metallurty programme of the Reactor Research Centre, was giving the second public lecture on January 27 at Ernakulam, organised by the Kerala Shastra Sahitya Parishat, as a curtain raiser to its annual conference this month.

He said based on the expertise being gained with the Fast Breeder Test Reactor (FBTR), the department would go ahead with designs for a prototype fast breeder, much more complex and massive than the test vessel. The reactor vessel diameter would be 15m while the FBTR was only 0.26m. It would be 14.5m tall as compared to the present 0.6m. And it would require 2600 tonnes of liquid sodium as coolant--where the present coolant totalled only a 1000 tonnes.

As a result, a quantum jump in heavy engineering capability was called for. The problems were as much on the shop floor as in the laboratory. He identified key areas where the engineering industry would find the biggest challenges: fabrication of components for use within the core area--largely involving type 316 stainless steel; steam generation components in ferritic steel; advanced welding techniques, some of which are already being attempted in the Welding Research Institute at Tiruchi and simulation studies on radiation damage and effects by using accelerators.

Dr Rodriguez said for components built for such high ambient temperatures like 500°C and beyond, there were no internationally available design codes and standards. India would have to evolve its own design codes for materials working at such temperatures, as will in high sodium and neutron environments.

The use of the carbides of plutonium and uranium in the FBTR rather than the oxides as done by all other nations, was itself part of futuristic planning. He said, "a calculated risk" had been taken, so that the breeder technology was still up to date in the 2020s. By 2050, he said, by present projections, even the class of plutonium breeders would become obsolete, and India plans to go over to thorium breeders, using natural resource available in Kerala, as a source of Uranium 233.

By then India would have a whole new class of engineering challenges.

/9274
CSO: 5150/0074

MP ALLEGES EXPLOSION AT BHABA ATOMIC RESEARCH CENTER

HK1501624 Hong Kong AFP in English 0556 GMT 15 Mar 86

[Text] New Delhi, March 15 (AFP) — Seven scientists were seriously injured and many others exposed to radiation in an explosion at India's Bhaba Atomic Research Centre (BARC) near the western city of Bombay, an opposition MP has alleged.

Janata Party MP V. Venkatesh told the PRESS TRUST OF INDIA news agency in Bangalore, southern India, on Friday that the blast had occurred two weeks ago.

Dr. Venkatesh raised the issue in the lower house of Parliament earlier on Friday.

But the speaker (presiding officer), refused to allow the MP to ask about he alleged incident, saying it was not the way to raise the matter.

"The people of the country want to know what was the cause of the blast," Dr Venkatesh said.

He urged the government to take steps to prevent radiation leakage.

There was no comment from either the government or the authorities at the centre.

/9274
CSO: 5150/0083

PUBLIC BORROWINGS TO FINANCE NUCLEAR PLANS

Calcutta THE TELEGRAPH in English 19 Feb 86 p 1

[Text]

Calcutta, Feb. 18: The department of atomic energy is planning to raise funds from the public for at least 50 per cent of the resources needed to fulfil the target of 10,000 MW of atomic power by 2000 AD.

This was disclosed by Dr P.K. Iyengar, director of the Bhaba Atomic Research Centre (BARC), after he inaugurated a workshop on "Utilisation and future programme of Variable Energy Cyclotron" at the BARC complex at Salt Lake today.

Dr Iyengar told newsmen Rs 14,000 crores would be needed to achieve the installed capacity of 10,000 MW. "The government has approved in principle the suggestion to raise half the amount through public borrowings," he said adding the idea had been inspired by the National Thermal Power Corporation venture on similar lines. Asked whether the government would go for a 14 per cent rate of interest, he said such a prediction could not be made now.

Commenting on the time-frame for achieving 10,000 MW of atomic power, Iyengar said it depended on how much resources were made available to the Atomic Energy Commission. He lauded the national planners for envisaging an India that would be self-reliant in the production of nuclear energy. "Although we are not so much self-dependent in electronics, as much as 95 per cent of the components in the power sector are now being manufactured in India," he said. Dr Iyengar asserted that atomic power generation in the country would become remunerative from 1995, by which time "income from sales would outstrip the investment made."

Food preservation: Dr Iyengar said BARC would shortly start a programme to popularise the preservation of food through gamma radiation. "The necessary approval from the health ministry was given recently and we are now allowed to irradiate food items."

He added, "In this programme BARC will follow the standard doses set by such world bodies as WHO and IAEA. Our scientists are already irradiating onions at Nasik. Spices could not be exported directly to the West without sending them to Holland for irradiation. Now we will be able to export them straight to the buyers after irradiating the products here itself."

/9274
CSO: 5150/0075

CYCLOTRON CENTER PLANS TO INSTALL NEW ACCELERATOR

Calcutta THE TELEGRAPH in English 19 Feb 86 p 4

[Text]

Calcutta, Feb. 18: The Variable Energy Cyclotron Centre (VECC) at Salt Lake is planning to instal another accelerator in addition to the one functioning now. The proposed facility will augment the energy of particle beams to 50 million electron volts (MeV), according to Dr A.S. Divatia, director, VECC. He was speaking at a workshop on utilisation and future programmes of variable energy cyclotrons at the VECC today. The workshop was inaugurated by Dr P.K. Iyengar, director of the Bhabha Atomic Research Centre (BARC).

According to Dr Divatia, there is a heavy demand for using present cyclotron for producing radioactive icotopes needed for studies in higher physics, engineering and medicine. Describing the rush for booking by users "as bad as witnessed in railway travel," he said: "Such a heavy pressure on the cyclotron operating time makes it very difficult to use this facility exclusively for production of isotopes. A sophisticated cyclotron as this one has a high operating cost of Rs 5,000 per hour."

He said the workshop had been necessitated to assess the future programme of the users. "A comprehensive view of this will help us arrive at programmes of research which are of greater interest from the fundamental point of view," he said.

Comparing the performance efficiency of the present facility to "any other machine of its kind," Dr Bikash Sinha, head of the computer division of the VECC, said in his welcome address that the expertise developed by building this cyclotron almost indegineously had yielded rich dividends. "We have now at hand well-trained experts, both scientists and engineers, at par with the rest of the world, in the classical tradition of Homi Bhabha's dream," he commented.

According to Dr Sinha, the expertise developed at the VECC was now helping its scientists "to look deep into the future." He said, "We hope to produce beams of particles heavier than alpha soon." The construction of another cyclotron on the campus will help the VECC arrive at "a scenario where the frontiers of international physics lie," he said.

/9274
CSO: 5150/0076

BRIEFS

KALPAKKAM REACTOR PERFORMANCE--Bombay, 3 Feb (PTI)--Mr S. N. Seshadri, an associate director of the Bhabha Atomic Research Centre (BARC), died here yesterday following a massive heart attack. He was 49. Mr Seshadri had made significant contributions to the control system of the Purnima and Dhruva reactors. [Text] [New Delhi PATRIOT in English 6 Feb 86 p 5] /9274

BARC OFFICIAL DIES--Varanasi, 5 Feb (UNI)--India will be capable of generating 10,000 MW of nuclear power by 2000 AD, according to Dr C. V. Sundaram, director of the Indira Gandhi Centre for Atomic Research, Kalpakkam. Talking to newsmen here yesterday, Dr Sundaram said the successful commissioning and operation of the fast breeder test reactor at Kalpakkam recently, had established that the carbide fuel had superior breeding capability with a higher power growth rate than the conventiooally used oxide fuel. He said at present, the Kalpakkam reactor was using indigenous mixed carbide fuel developed by the Bhabha Atomic Research Centre. The fast breeder test reactor at Kalpakkam marked the beginning of the second phase of the country's nuclear power programme. Dr Sundaram said the country was relying almost on its own resources in the atomic energy field by using natural uranium and abundant thorium resources. He said with the possibility of an energy crisis in the 21st century, the only solution possible was utilization of nuclear fission energy and solar energy. He said of these fusion and solar energy utilisation were still in the experimental stage while fission power was considered safe, reliable and commercially proven. Fission power, he said, would be the major energy resource in the coming years. In future, atomic energy would be used in laser application, high energy accelerator, technology of new temperature in physics and various other fields, he added. [Text] [Calcutta THE TELEGRAPH in English 4 Feb 86 p 5] /9274

CSO: 5150/0078

AL-QADHDHAFI PLEDGES NOT TO PRODUCE NUCLEAR BOMB

LD121119 Kuwait KUNA in English 0942 GMT 12 Mar 86

[Text] New Delhi, March 12 (KUNA) — Libyan leader Col Mu'ammar al-Qadhdhafi has called for "direct dialogue with India" to resolve all "misunderstanding that has arisen between Tripoli and New Delhi".

The Libyan leader in an interview published Wednesday in *THE INDIAN EXPRESS* daily expressed disatisfaction over the feeble Indian response to the recent American threats to Libya. Libya sought India's help in its recent crisis, which led to escalation of tension in the North African region. It sent a message to I ian External Affairs Minister Bali Ram Bhagat, explaining its position.

Three months ago tension was high between Libya and the United States after Washington hinted that Tripoli was behind the December attacks on Rome and Vienna airports and American threats of reprisal [were] coupled with U.S. naval military maneuvers off the Libyan coast. Libya then sought but apparently failed to get India's denunciation of the American threats.

Libya is likely to send Major 'Abd al-Salam Jallud to India with the hope of further strengthening friendly ties between the two countries. He is also likely to hold wide ranging talks with Indian leaders on political, economic and other issues. Major Jallud visited India during the Janata regime and during the nonaligned meet in 1982.

The paper said the Libyans appear to be sensitive to the fact that the Indian Vice President Ramaswamy Iyer Venkataraman will be the formal host of Major Jallud. But they have been assured by the Indian Government that Indian Prime Minister Rajiv Gandhi will have separate talks with him.

(?Al-Qadhdhafi said) "During the American-Libyan confroatation the stand of India stopped short of what was expected." "India as chairman of the Nonaligned Movement should have expressed unrestricted support against this Zionist-American joint aggression". Al-Qadhdhafi spoke warmly of late Indian Premier Indira Gandhi whom he described as a great champion

of the Nonaligned Movement. He said he was deeply moved and much "affected" by her assassination. The Libyan leader said "India has a special status and weight in the Nonaligned Movement".

He renewed a pledge that "Libya would never help Pakistan to acquire nuclear bomb. We consider nuclear weapons production a fatal mistake against humanity".

Referring to the 45,000 Indians, working in various government agencies in Libya, Al-Qadhdhafi said "they are our good friends and they are serious and diligent workers".

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CSO: 5100/4607

BRIEFS

PARTY URGES NUCLEAR DEVICE--Gujranwala, 3 Mar: Mr Hanif Ramay, chief of Pakistan Musawat Party, while addressing the district bar here on Monday said that it had become imperative for Pakistan now to build a nuclear device. It was the only way to persuade India to develop friendly relations with Pakistan, he added. He said that those who think that Islam is not an essential philosophy for Pakistan, are living in a fools' paradise. He deplored that provincialism and parochialism had reached the climax in Pakistan. He referred to the Jamshoro University kidnappings and abductions in the connection. Rebutting the claim that parliamentary democracy had been restored in Pakistan, he said, if that was so, how come the president in his capacity as chief of the Army Staff, subservient to the prime minister, while the premier himself could be sacked and the National Assembly could be dissolved by the president. The chief of the Muszwat Party dismissed the concept of confederation and said that it was a martial law product. He strongly condemned feudalism and said that living conditions of the downtrodden could not be improved unless the feudal lords and generals were eliminated from politics. [Text] [Karachi DAWN in English 4 Mar 86 p 2 GF] /9274

CSO: 5100/4736

SOUTH AFRICA'S NUCLEAR CAPABILITY, U.S. AID ASSAILED

MB070520 Moscow in Zulu to Southern Africa 1800 GMT 5 Feb 86

[Vladimir Voyevodov commentary]

[Text] Ten years ago, on 5 February 1976, the South African parliament passed a bill concerning the security of that country. The provisions of this bill are such that South Africa may use whatever means at its disposal against any country if the South African regime feels threatened. Let us now listen to a commentary prepared by Vladimir Voyevodov on this issue.

Ten years ago, the racists changed tactics following victories in the liberation struggles in Angolan and Mozambique where the chains of oppression were broken and the oppressive Portuguese regimes sent packing. The independent African countries posed a threat to the regime's ability to continue the suppression of the liberation struggle in southern Africa. A bill was therefore hurriedly approved to further strengthen the security of South Africa and in so doing it provided for aggression against its neighbors.

The racists have caused extensive damage in their undeclared war in Angola, but they did not stop there. They are committing aggression against their independent neighbors like Mozambique, Lesotho, Botswana, and others. In order for the regime to continue its repression in South Africa, there is a need for more modern weaponry, which is used increasingly with the help of the West, particularly the United States.

Even though the UN Security Council passed a resolution imposing sanctions on the provision of arms to South Africa in November 1977, the consignments from the West have increased. The regime has also greatly increased its armament industry, again with the help of the West. South Africa's armament industry, the Armaments Development Corporation of South Africa today manufactures some Western weapons under license and even exports some overseas. All this has helped South Africa to be among the top ten best armed nations in the world.

Today South Africa poses a threat not only to the African continent, but to the whole world. The great danger is that the racists are plotting to acquire weaponry that can annihilate large numbers of people, chemical, biological, nuclear weapons. There is growing opportunity for South Africa to attain

nuclear capability because of the United States. South Africa is one of the countries that refrained from signing an agreement against use of nuclear weaponry. Lately there has been growing talk in Africa of the presence of biological weapons in South Africa that can discriminate on the basis of race. These are meant to selectively kill the black race and leave out the white race. Such diabolical weapons are being researched and manufactured with the aid of the United States.

On many occasions, those advocating apartheid have bragged to Africa and the international community that they are prepared to defend their racist policies and are willing to spill as much blood as will be necessary to maintain them.

The South African regime has become a threat to world peace. Therefore, the onus is on all humanity to work towards its downfall to preserve peace.

/6662
CSO: 1812/84

NUCLEAR POWER PLANT TO BE BUILT WEST OF HUMANSDORP

Cape Town DIE BURGER in Afrikaans 16 Dec 85 pp 1, 2

[Article by our correspondent: "Nuclear Power Planned near Humansdorp"]

[Text] Port Elizabeth--South Africa's second nuclear power plant will probably be built west of Humansdorp.

A press officer from EVKOM [Electrical Supply Commission], Marius Rautenbach, who last week flew over possible sites for a nuclear power plant in the Humansdorp area with newsmen, told DIE BURGER that preliminary indications are that the project will probably be built west of Humansdorp. Land speculation would not be advisable, however, since the plant will require only 4.5 km of the coast and an area 2 km in from the coast.

Private Property

According to Rautenbach, EVKOM is engaged in a comprehensive investigation that will take 6 years and will study 19 proposed coastal areas.

The first study is that in the Humansdorp area. This stretches from Cape St Francis to near the mouth of the Tsitsikamma River and includes about 60 km of coast. The land in this area is largely in private possession.

The second area to be investigated is east of Port Elizabeth and stretches about 80 km from the mouth of the Sondags River to near Cape Padrone. Most of the land in this area belongs to the Forestry Directorate.

The location of the other 17 areas has still not been revealed.

In the area east of the Sondags River to near Woody Cape, geologists have already found three earth faults from the air, which makes this area unacceptable. The site must also be so located that power can easily be distributed across the country through the transmission system.

Rautenbach said that the search for a suitable site has already been reduced from 2,400 km of coastline to 610 km. This project will bring 7,000 people to the area, of whom only 2,000 will remain when the nuclear power plant is completed.

DIE BURGER was told that the necessary infrastructure with churches, hospitals, and schools will be required for such a project.

Four Units

EVKOM's policy is no longer to create satellite towns, but rather to have workers commute up to 40 km to the site. A town like Humansdorp for instance will be approached for this, and EVKOM will help finance it.

The proposed nuclear power plant will be similar to Koeberg, which consists of two units. EVKOM plans to provide another four units.

12593/12859
CSO: 5100/13

ESCOM DEVELOPING LONG-TERM NUCLEAR ENERGY STRATEGY

Cape Town THE WEEKEND ARGUS in English 15 Feb 86 p 5

[Text]

JOHANNESBURG. — Escom is developing a long-term nuclear energy strategy, and has reserved possible sites along South Africa's coastline for the construction of a network of new nuclear power plants for the future.

This has been disclosed by Escom chairman Mr John Maree and senior general manager Mr Ian McRae, who said that although there was no immediate blueprint for a second Koeberg, it was inevitable that nuclear energy would be a chief source of power in South Africa by the turn of the century.

Nuclear energy was a positive option — and South Africa could have its second nuclear plant within 10 years.

After announcing a dramatic restructuring programme, Mr Maree and Mr McRae lifted the lid on Escom's plans in the nuclear energy field.

26 stations

They said provisional sites had been selected along the Western and Eastern Cape coasts and in Natal.

Escom operated 26 power stations, mostly coal-fired, which generate 94 percent of South Africa's electricity needs, or 60 percent of all power produced in Africa.

It also supplied all or part of electricity consumed in Lesotho, Swaziland, Mozambique and Botswana.

While, for the time, South Africa was well-stocked with coal reserves, nuclear power was a viable alternative source as Koeberg, which generated more power than 12 alternative plants in the Cape and the hydro stations in Natal, had shown.

/9317
CSO: 5100/18

U.S. AIDS PAKISTAN, RSA, ISRAELI NUCLEAR PROGRAMS

WA181645 Moscow KOMMUNIST VOORUZHENNYKH SIL in Russian No 23, Dec 85 pp 80-84

[Article by Lieutenant Colonel V. Poshchpkin under the rubric "On International Subjects": "The Thieves and Their Patrons"]

[Text] "A group of dingy concrete structures surrounded by a barbed wire fence rose above the surrounding dunes. We drove up to them. There was not a soul around, it seemed. When the cameramen attempted to film the facility for television, however, they were immediately seized by security agents who appeared out of nowhere. An officer ordered us to leave the area...."

One might say that American journalist David Willis, whose report is excerpted above, was lucky. Willis completed the trip to a desert area of Pakistan on the shore of the Arabian Sea, safe and sound. His colleague, a British reporter, was not so lucky, according to the London newspaper FINANCIAL TIMES.

...In the town of Kahuta 40 km from Islamabad there is a facility which officials call a "modest research establishment." The development of research in Pakistan, one of the poorest Third World nations? Is this not a subject for an article in the press? It is doubtful whether the British reporter who left for Kahuta, where the "scientists" work, anticipated how his trip would end. The Briton was beaten up and arrested as soon as he approached the facility which was the object of his interest.

Only a few years ago many people went to this town to relax on their days off. Today, according to the Western press, the roads leading to it are controlled by Army subunits and security forces, and antiaircraft missile systems have been set up on nearby hills. Despite efforts by the authorities to squash (in the literal sense) the journalists' desire to visit Kahuta, the purpose of the "establishment" located there, like the facility on the shore of the Arabian Sea, became known.

Contrary to statements by the authorities on the peaceful nature of the plant in Kahuta, its products are designated for military purposes. And not just military purposes. This highly guarded enterprise, the newspaper THE WASHINGTON POST reports, will provide enough fissionable material to produce an atomic bomb. The experts, the newspaper stresses, believe that this is just a matter of time.

A Bomb in the Basement

It has been learned that a secret plan by certain circles in Pakistan whose objective was to create the "first Islamic" atomic bomb was code-named Project 706. In addition to the above-mentioned facilities, an enterprise for processing nuclear fuel at Chashma, the Pakistan Institute of Nuclear Research and Technology, and others mentioned in the foreign press are also contributing to the realization of this ambitious "project."

The aforementioned American journalist D. Willis writes that during a trip to a number of nations in Asia and Africa he succeeded in gathering irrefutable evidence that Islamabad, with the assistance of certain other states, is on the threshold of creating a nuclear weapon. And a UPI correspondent has reported from Islamabad that a nuclear device could be tested there within the immediate future.

Indian newspapers report that not long ago members of a parliamentary consultative committee of India's Ministry of Defense were shown a documentary film proving that Pakistan is truly close to creating an atomic weapon. The Indian MP's became convinced of the falsity of propaganda put out by authorities in Islamabad, who allege that the nuclear research program being conducted in the nation is for peaceful purposes. Members of the parliamentary committee were also informed that certain Western nations, including the USA, are participating in Pakistan's development of a nuclear weapon. It is from the West that Pakistan is obtaining the uranium and nuclear technology.

(G. Sokhni), a member of India's Institute for Defense Studies and Analyses, recently stated that the military administration itself had arranged for obtaining enriched uranium suitable for creating an atomic weapon. And Pakistan can even now actually be considered a state with "nuclear bombs in the basement." The Indian scientist stresses the fact that Ziaul Haq's regime has now begun the accelerated development of missiles for delivering nuclear weapons to targets 1,000 miles away.

There are foreign telegraph agency and press reports from many areas that the authors of Project 706 are working with feverish haste. One such report, from New York, created a lost of fuss. Authorities at the local Kennedy Airport confiscated some unusual cargo aboard an aircraft departing for Pakistan: more than 2 tons of zirconium, a metal used in nuclear technology. It was learned that the zirconium, disguised as ordinary baggage, had been secretly purchased by a former Pakistani serviceman. A specific detail of particular interest to journalists surfaced in the story: The arrested retired colonel turned out to be a personal friend of General Ziaul Haq, the Islamabad dictator....

Authorities in Islamabad recently arranged a splendid reception for a certain Nazir Vaid, who had flown in from the USA. What did he do to deserve this? one might ask. Posing as a businessman, Vaid had attempted to smuggle into Pakistan parts for installation on atomic bombs. The Pakistani spy, the American newspapers reported, was directly linked to those in charge of Islamabad's nuclear program. The surprising thing, however, is the fact that although American authorities arrested Vaid, they soon released him on the order of the Justice Department. He returned safely to Islamabad with fanfare, instead of serving a considerable term for espionage as he should have under American law....

Thanks to "businessmen" such as Nazir Vaid, scarce materials and equipment began to flow into Pakistan: pipes made of special steel from The Netherlands, evaporators and compressors from Switzerland. Technology and equipment involved in the production of enriched uranium and nuclear fuel, for which Islamabad's representatives launched a real hunt, also arrive from Canada, the FRG, Great Britain, and certain other nations. The British newspaper FINANCIAL TIMES has stated that the "special projects" are directed by Brigade General A. Syed, former chief of the Pakistani Army's Operations Directorate, who studied engineering in the United States.

And so, there is more than enough evidence in the foreign press that Pakistan is close to creating an atomic bomb. Even if we concede that some of the reports by the journalists are clouded by the sensationalism which is typical of the Western press, even so it would hardly be expedient to ignore them. The press reports, after all, only confirm that which has been stated from time to time by official people and establishments. CIA experts, for example, state that Islamabad will continue to stockpile fissionable material which can be used in the production of nuclear weapons.

Furthermore, statements like these have been made officially across the ocean, by representatives of the American Administration themselves. Speaking in the U.S. Senate, A. Cranston, Democratic senator from the state of California, acknowledged the following: "Pakistan now has potential sources of plutonium, which will be used in the production of nucelar weapons." Cranston fears that it will be impossible to monitor this process.

It is the assessment of the American ambassador to Islamabad, a fact published in the press, that Pakistan is already producing a large quantity of plutonium. Why plutonium? We know that an atomic bomb can be created with the necessary quantity of pure uranium or of plutonium. According to statements by Western experts, eight kg of plutonium can produce a 20-kiloton atomic bomb with an explosive force equivalent to that which destroyed Hiroshima in August of 1945.

And so, plutonium is one of the ingredients for producing such a weapon. The rest is just a matter of technology. Whether this or that power possesses it is another question. With respect to the uranium raw material, however, it wasn not clear for some time where Pakistan had obtained it. The question was then answered. From mines in Niger, which are controlled by Western companies.

But what about the technology? In order to clear this up, we need to dicuss a certain Abdul Qadir Khan, whose name is frequently mentioned in the Western press. This engineer directed construction of the uranium enrichment plant at Kahuta. Prior to that, according to the French magazine LE NOUVEL OBSERVATEUR, Doctor Khan managed to gain access to the technology for enriching uranium by centrifuging at URENCO, a West German-British-Netherlands consortium. And he is the one who originally directed the purchasing of industrial equipment abroad.

LE NOUVEL OBSERVATEUR, which informed its readers that Khan had assembled the necessary technical information, called him "one of the most talented spies of our time." It is certainly not just a matter of his espionage merits, however. Islamabad's nuclear pretentions became a possibility because imperialist circles of certain nations in the West connived with it. Nor should we forget the fact that the USA provides the Islamabad regime with large-scale military assistance, supplying it with conventional weapons. According to reports in the press, however, it is also receiving a large number of F-16's, the latest fighter-bombers and carriers of nuclear weapons. This is one more ominous line in the chronicle of connivance with Islamabad in its nuclear preparations....

Why did the White House give the green light to massive shipments of arms to Pakistan? After all, for several years prior to this Washington had refused to do this for Gen Ziaul Haq because of the nuclear program, which called for the creation of an atomic bomb. This factor has now been removed from consideration. Official Washington is actually closing its eyes to the Islamabad regime's nuclear preparations and rapidly arming it. The USA's military-economic assistance to Pakistan amounts to the enormous sum of $3.2 billion. And in September of 1985 representatives of the Washington Administration declared their agreement to make a new deal with Islamabad--this time in the amount of $6 billion!

Reliance on the shah of Iran, who was assigned the role of White House policeman in Southwest Asia and particularly in the vast Persian Gulf zone, as we know, was broken. The USA is now intensively promoting Pakistan as its policeman. In the reckoning of the oversea strategists, it could become the central link in the system for protecting American imperialism's "vitally important" interests in the Persian Gulf area and throughout the region. Islamabad is increasingly becoming the main staging area for the "undeclared war" against democratic Afghanistan and a transhipment base for the Rapid Deployment Force, the American corps for aggression and brigandage.

The massive shipments of military supplies, observers note, give Pakistan "the possibility to use its previously limited means to implement 'a nuclear program which was previously prohibited'." Nuclear programs do in fact require a great deal of money, and the standard of living for the working masses in the nation is extremely low. It is 24th among the 34 poorest nations of the world with respect to development. Instead of improving the lot of the masses, however, the authorities continue to spend a considerable portion of the funds for military purposes, including the infamous Project 706.

The dangerous pretentions of Gen Zia's military regime are producing deep concern in political and military circles of neighboring states, in all those who value peace, security, and political stability in Asia. Islamabad's nuclear preparations are especially alarming to India. The government of that nation has repeatedly stated that it is aware of Pakistan's attempts to acquire nuclear weapons, that India is keeping a close watch over Islamabad's efforts in this area. "If nuclear weapons appear on the Indian subcontinent, this will be the point of no return," Indian Prime Minister R. Gandhi has said. In a May 1985 interview with the French newspaper LE MONDE he stated the following: "We assume that Pakistan is very near to mastering nuclear weapons or already possesses them, and not just one."

The Islamabad example clearly shows the danger posed by the arms race problem and the spread of nuclear weapons over the planet. Receiving expensive technology, weapons, and military equipment from the west, primarily the USA, Pakistan is increasingly coming under military-political independence upon Washington and being drawn into the wake of its militaristic, aggressive course. The newspaper TIMES OF INDIA cites some remarkable statements by the aforementioned Senator A. Cranston to the effect that the USA appears to be deliberately contributing to the process of turning Pakistan into a "nuclear power." Indeed, the United States, a nation which signed the Nuclear Nonproliferation Treaty, is pursuing its own mercenary, imperialist, hegemonistic interest in the region by conducting a policy of connivance with and even secret support for Islamabad's nuclear ambitions. Observers point out an extemely important detail in this dangerous escalation of its connivance: As early as 1979 Islamabad was given to understand that the USA would not hinder its nuclear development projects if it would take a more active part in the implementation of American military-political strategy in Asia. "It is very important to America that Pakistan's nuclear bomb be in the hands of a friendly government," stated Pentagon chief C. Weinberger. One could not be more candid that.... And so, imperialist circles led by Washington have actually helped their Islamabad "friends" grab the "nuclear genie" by the beard. Disregarding everything, Islamabad is dragging the genie into its secret basements.

This is why millions of Pakistanis are opposing the nation's subordination to oversea interests and the excessive military outlays. Participants in the antigovernment demonstrations which have developed in the nation and which are involving increasingly broader segments of the population, are also opposing American "aid" to Pakistan and the latter's use as a staging area for the undeclared war against democratic Afghanistan.

The Nuclear Missile Tandem

More and more nations of the capitalist world where reactionary regimes are in power are becoming infected with the virus of nuclear ambitions. The harnesses for the nuclear chariot are being actively prepared in secret recesses in the military-political basements of Zionist Israel and the racist Republic of South Africa.

The foreign press frequently carries reports on sudden "disappearances" of uranium. And not just from somewhere, but from the territory of the United States. Such "sales" have been made at enterprises of Pentagon subcontractors in the USA, among others, a fact reported in American publications at the beginning of 1984.

We need only mention the "disappearance" of 110 kg of enriched uranium from a plant for the production of nuclear fuel in the city of Erkin, Tennessee, and 198 kg at a facility for the production of nuclear fuel for submarines in the city of Apollo, Pennsylvania. At that time the authorities attempted to blame everything on some mythical "terrorists." A hue and cry was raised, and the terrorists were sought among the personnel, but in vain. The "terrorists" were not found, and the uranium continued to disappear in greater and greater quantities.

More than 80 kg of enriched raw material "disappeared" from a secret facility for the production of nuclear weapons at Oak Ridge, Tennessee, between 1979 and 1982 alone. More than 85 atomic bombs could be prepared from all of the materials which have "disappeared" from Oak Ridge over the past 35 years. This is stated in secret documents which came into the possession of the information service of the Scripps-Howard Newspaper Trust.

It is difficult to accept the "impotence" of American authorities in their attempts to find the "disappearing" uranium and the thieves. Some newspapers have openly stated that the uranium which disappeared in the USA under "inexplicable" circumstances should be sought in Israel and the Republic of South Africa. Those nations, the American publications stressed, are secretly importing the raw materials necessary for producing atomic devices.

According to TIME magizine, at the very beginning of the Zionist state's establishment, its ruling circles were infected with the dangerious nuclear virus. Hayim Weizman, a chemist and Israel's first president, did everything possible to encourage the Jewish atomic scientists who arrived in the "promised land." The Israeli specialists extracted low-grade uranium from phosphates in the Negev Desert and developed an effective technological process for producing heavy water.

In exchange for this information, Israel obtained permission to take part in atomic test tests in the Sahara. Later, with the assistance of certain circles in the USA, France, and the FRG, the Israelis established their own atomic research center at Dimona in the Negev Desert. The facility was called a "textile factory" to protect its secrecy. Certain specialists abroad believe that Tel Aviv conducted underground nuclear tests in the Negev Desert as early as 1963, after which the Israeli atomic scientists began preparing the materials for atomic bombs.

A number of foreign publications have cited convincing evidence that Tel Aviv already has the so-called "judgment day weapon," although officially Israel's leaders neither confirm nor deny this information. They are demonstrating sensitivity, so to speak, toward their overseas patrons, among whom dozens of Israeli atomic scientists have served their apprenticeship. Even back in the 50's those patrons generously forked out $350 million to Tel Aviv for nuclear tests. E. Teller, the "father" of the American hydrogen bomb, who repeatedly advised the Israeli atomic scientists, admitted: "I frequently visit Israel. The Israelis tell me everything they know. I tell them everything I know...."

In the "promised land" itself some of the "hawks" openly speak of its nuclear weapons. Reserve General E. Raviv expounds: "Due to the fact that sources for building up the Israeli Army with personnel have practically been exhausted, we must have a qualitatively new stage of armament, a nuclear stage, in order to enhance our militaristic [militaristskiye] efforts." The British newspaper SUNDAY TIMES stated in May 1984: "After the Arab-Israeli war of 1973, the CIA and the French intelligence service independently concluded that Israel must have its own nuclear arsenal. They agree that Israel now has more than 30 units of nuclear weapons and is producing more and more bombs, approximately two or more a year."

And what is the present Washington Administration's attitude toward Zionist Israel's nuclear programs? The White House simply ignored reports that a nuclear device was tested in the southern part of the Atlantic by Tel Aviv and Pretoria in the fall of 1979.

Pretoria is also actively at work to create nuclear weapons. Judging from foreign reports, there is an entire atomic complex operating in the Republic of South Africa. The South African press has given the name "nuclear-missile triangle" to the area between Cape Town, Cape Agulhas, and Mossel Bay. The press states that the Pretoria regime has allocated several billion rands for the construction of nuclear plants, testing grounds, research centers, and plants for the production of missile fuel in that region. According to the Cape Town newspaper ARGUS, a powerful military nuclear center has been established near the city of Mossel Bay.

In another area of the triangle, near Cape Agulhas, the state corporation for the development of weapons production is building a huge testing ground. A plant for the production of nuclear fuel has been placed into operation in the vicinity of Wellington. A secret research center operates at Faure where carefully selected scientists, engineers, and technicians work of problems of nuclear physics and chemistry.

The nuclear projects of the racist Republic of South Africa are carried out in close interaction with Zionist Israel. "The Republic of South Africa," the aforementioned SUNDAY TIMES noted with respect to the explosion in the southern part of the Atlantic, "could not have exploded a nuclear device on its own." The "Israel-Republic of South Africa" nuclear tandem is becoming more and more threatening. In exchange for South African uranium, Tel Aviv is helping the South African racists not only with technology, but also with the creation of the means of delivering the nuclear weapons. These are facts cited in foreign publications.

The Republic of South Africa has officially stated that its Army already has the 155-mm self-propelled howitzer, which is capable of firing projectiles containing nuclear charges. According to certain evidence, these projectiles were developed jointly by Tel Aviv and Pretoria. Since 1981 Israeli technical specialists have participated in the construction of the first nuclear-powered submarine in the Republic of South Africa. The two nations are working jointly on the creation of a cruise missile with a nuclear warhead. According to the plans of the authors of this ominous project, it will have a range making it possible to keep the entire African Continent, from north to south, in its nuclear sight, and furthermore, to threaten the nations of Asia from Israeli territory.

Washington is also taking part in the implementation of the dangerous plans. Information from the American Atomic Energy Commission indicated that 88 specialists have been trained overseas in this field. The USA has shipped nuclear reactors to Pretoria and sent more than 100 kg of enriched uranium to the atomic center at Pelindab. An agreement between the nations on deliveries of this uranium will be in effect to the year 2007. The Republic of South Africa also has its own plant for enriching this strategic material.

The foreign experts have calculated that in 1979 the Republic of South Africa had enough enriched uranium to produce seven or eight atomic bombs. The "nuclear appetites" of the racists are growing, however. In August of 1983 the American AP agency reported on plans by authorities in the Republic of South Africa to create yet another atomic center. It will be located in Cape Province, and 300 specialists will be employed there.

One understands the terrible threat posed to the peoples of the young liberated nations of Asia and Africa by the programs for creating nuclear weapons of the pro-American regime in Pakistan, Zionist Israel, and the racist Republic of South Africa, which are being effected with the connivance of the West and sometimes with its direct assistance -- particularly when one considers the fact that the vast majority of armed conflicts occuring in the 40 years since the end of World War II have occurred precisely in Asia and Africa.

Problems of nuclear weapons limitation, reduction, and nonproliferation have priority in the Soviet State's foreign policy course.

Our nation's position is clear and noble: restrain the arms race in all its directions, withdraw from the atomic abyss, and set out on a path leading to the banning and the elimination of nuclear weapons. Large-scale Soviet peace initiatives aimed at this, which were put forward by Comrade M.S. Gorbachev during his recent visit to France, offer an opportunity for deliverance from the threat of catastrophe.

The Nuclear Nonproliferation Treaty, which took effect in 1970, has an important place. Among other things, this was discussed in Geneva at a conference of states participating in the Nuclear Nonproliferation Treaty in August and September of 1985.

"...We are for vigorous efforts to restrain the arms race in all its directions," Comrade M.S. Gorbachev stressed. "And measures to prevent the spread of nuclear weapons unquestionably continue to occupy an important place here." True to its commitments, the Soviet Union has done and will continue to do everything within its power not just to prevent the spread of nuclear weapons, but also to halt and reverse the nuclear arms race, to drastically reduce and then eliminate the lethal arsenals.

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URANIUM OFFER GREATER THAN DEMAND ABROAD

Lisbon O JORNAL in Portuguese 14 Mar 86 p 19

[Text] Portugal is the only country in the European Community producing uranium exclusively for export or reserve, for future use, at a time when the supply of this ore exceeds the demand by nearly 20 percent.

The national production of uranium, which amounted to 140 tons in 1985, representing over 650,000 contos from the standpoint of value, could double by the end of the century, if a new mining project, the economic feasibility study of which, made by ENU (National Uranium Enterprise), is nearly completed, receives approval.

Portugal, which ranks among the four countries of the European Economic Community with uranium resources, is meanwhile faced with the situation of raising its production under adverse conditions on the international market, specifically, surplus supplies caused by the competition from countries such as Australia and Canada, with surplus stocks that will ensure several years of consumption, and the resultant drop in the price of the ore.

In the context of its affiliation with the EEC, Portugal, which is now exporting part of its uranium production to the United States and France, will have to procure authorization from the European Commission to export the ore to countries that are not members of the community, under the terms of provisions in the treaty establishing the European Atomic Energy Community (Euratom).

At a time when the ore was in short supply on the international market and the prospects for using nuclear energy were more optimistic, Euratom required that the reserves of the member nations must be used by EEC countries.

The national uranium reserves have been assessed at 6,700 tons, at prices less than $80.00 per kilogram, and at 1,500 tons, at prices between $80.00 and $130.00; while the additional resources are estimated at 2,500 tons, and the speculative resources, at between 7,000 and 8,000 tons.

The national energy plan for 1984 called for a maximum installed nuclear power of nearly 3,000 megawatts, by the year 2010; which would ensure a contribution of nuclear power for electricity production of approximately 32 percent.

In 1983, oil accounted for nearly 81 percent of all the primary energy consumed in Portugal, and was responsible for almost 62 percent of the deficit in the balance of goods.

Of the EEC member nations, only Belgium, the Federal Republic of Germany, France, Portugal, and Spain produce uranium; and it is anticipated that, in 1990, the EEC will still have to import 75 percent of the uranium that it consumes.

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